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10/696,582	10/30/2003	Uwe Kubach	13909-141001 / 2003P00692	7223

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EXAMINER	
CHAMPAGNE, LUNA	

ART UNIT	PAPER NUMBER
3627	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/696,582	KUBACH ET AL.	
	Examiner	Art Unit	
	LUNA CHAMPAGNE	3627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-10,12,13,15-23,25,27,28,30,32,33,39-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10,12,13,15-23,25,27,28,30,32,33,39-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED AC TION

Applicant's amendment filed on 2/24/10 has been entered. Claims 1-6, 8-10, 12, 13, 15-23, 25, 27, 28, 30, 32, 33, 39-48 are presented for examination. Claims 7, 11, 14, 24, 26, 29, 31, 34-38 are cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 9, 12, 13, 15, 16, 18-23, 25, 27, 30, 32, 33 , 39-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowe et al. (5,671,362), in view of McPherson (4,674,605), in view of Official Notice.

3. Re claims 1, 21, 39, Cowe et al. teach a method/ computer program product of load monitoring, the computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to load monitoring comprising:

-maintaining an item database that includes a definition of one or more items potentially included in a load positioned upon the load storage device, wherein the definition of each item includes one or more parameters that define the item; (see e.g. col. 11, lines 27-39; col. 2, lines 49-54, col. 3, lines 1-4) ;

-monitoring initial state load signals generated by a plurality of load sensors, (*provide sensor information for generating a first inventory map of said product items stored in said storage volume at a point in time*);

-monitoring current state load signals generated by the plurality of load sensors (*generate a subsequent inventory map*);

-comparing the initial and current state load signals to determine a change in load on the load storage device; (*compare said first and previous inventory maps*) (S*ee e.g. col. 3, lines 9-24);* and

-determining an identity of an item based on the change in load and on the item database wherein the determining is executed by a processor that uses the load change as an input (*see e.g. col.11, lines 33-39 -Preferably, the system calls for the entry of an item identifier for each item placed on the shelf, for example by scanning a bar code, and the software enables that identifier to be associated with a shelf storage location for that item. Such receipt data may then be referenced, by shelf location to determine the identity of an item withdrawn (*load change*) from the shelf unit 10. See also col. 20, lines 1-5 where sensing grid 32 may be designed to be sensitive to changes in pressure).*

-determining a position of the load relative to a surface of the load storage device in three dimensions based on the load signals (*see e.g. col. 9, lines 42-50)*; and

-generating an updated current state model by modifying the current state model based on the position and the identity (*see e.g. col. 24, lines 54-56)*.

Cowe et al. do not explicitly teach generating a current state model that defines loads positioned on a top surface of a load storage device;

However, McPherson teaches generating a current state model that defines loads positioned on a top surface of a top surface of a load storage device (see e.g. col. 1, lines 39-48; see also col. 3, lines 1-2 where the current load is being calculated. It is understood that the sensor reading is of loads on a top surface of the elevator).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify Cowe et al., and include the step of generating a current state model that defines loads positioned on a load storage device, as taught by McPherson, in order to efficiently determine the different states associated with a load.

Cowe et al., in view of McPherson do not explicitly teach each of a plurality of load sensors positioned on a bottom surface and at respective corners of the load storage device in order to accurately measure the load.

However, Official Notice is taken that it is old and well known in the art to have a plurality of load sensors positioned on a bottom surface and at respective corners of a load storage device (see e.g. Aoki (6,817,254) col. 1, lines 24-28).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify Cowe et al., in view of McPherson, and include the step wherein each of a plurality of load sensors positioned on a bottom surface and at respective corners of the load storage device in order to accurately measure the load (see e.g. Aoki, col. 1, line 59)

4. Re claims 2, 3, 22, 23, Cowe et al., in view of Teller et al., do not explicitly teach a method comprising establishing an empty state model for the load storage device during an empty state in which the load storage device does not contain any load; further comprising: modifying the empty state model to generate the current state model pursuant to changes in the load positioned upon the load storage device, wherein the current state model defines the load positioned upon the load storage device during a loaded state.

However, McPherson et al. teach a method comprising establishing an empty state model for the load storage device during an empty state in which the load storage device does not contain any load; further comprising: modifying the empty state model to generate the current state model pursuant to changes in the load positioned upon the load storage device, wherein the current state model defines the load positioned upon the load storage device during a loaded state (*See e.g. col. 1, lines 39-48).*

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify Cowe et al., in view of Teller et al., and include the steps cited above, as taught by McPherson et al., in order to provide flexibility in ways of generating a current state .

5. Re claim 4, Cowe et al. teach a method further comprising: maintaining an item database that includes a definition for each of the plurality items potentially included in

the load positioned upon the load storage device, wherein the definition of each item includes one or more parameters that define the item (S*ee e.g. col. 3, lines 1-4).*

6. Re claim 5, Cowe et al. teach a method wherein the one or more parameters are chosen from the group consisting of: item name, item part number, product quantity per item, item weight, item height, item width, and item depth (S*ee e.g. col. 9, lines 56, col. 10, lines 29-32, col. 23, lines 34, 59-60).*

7. Re claims 6, 25, Cowe et al. teach a method wherein modifying the empty state model includes adding one or more items to the empty state model (S*ee e.g. col. 24, lines 14-22).*

8. Re claims 9, 19, 20, 27, 32, 33, Cowe et al., in view of Asher, do not explicitly teach the limitations as claimed. However, McPherson et al. teach a method wherein comparing the initial and current state load signals includes determining a net load change in the load positioned upon the load storage device (S*ee e.g. col. 3, lines 1-5);* a method wherein the initial state is an empty state or a loaded state; wherein the current state is an empty state or a loaded state (See e.g. col. 2, lines 6-8, col. 3, lines 1-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Cowe et al., in view of Asher, by including the steps of comparing the initial and current state load signals includes determining a net load change in the load positioned upon the load storage device, and wherein the initial state

is an empty state or a loaded state; wherein the current state is an empty state or a loaded state, as taught by McPherson et al., in order to allow reading of different states which will make the system more flexible.

9. Re claim 12, Cowe et al. teach a method further comprising updating a state model to include the chosen item (S*ee e.g. col. 24, lines 54-56).*

10. Re claims 13, 30, Cowe et al. teach a method further comprising generating the current state model for the load storage device during a loaded state of the load storage device (S*ee e.g. col. 5, lines 28-34).*

11. Re claim 14, Cowe et al. teach a method further comprising updating the current state model pursuant to changes in the load positioned upon the load storage device (S*ee e.g. col. 24, lines 54-56).*

12. Re claim 15, Cowe et al. teach a method further comprising positioning the load sensors about the load storage device (S*ee e.g. col. 9, lines 51-57).*

13. Re claim 16, Cowe et al. do not explicitly teach the claimed limitations. However, Cowe et al. teach a similar feature (see e.g. col. 9, lines 17-24). Therefore, it would have been a design choice to include the step wherein the load storage device is generally rectangular in shape and positioning the load sensors includes positioning one

load sensor proximate each corner of the load storage device, in order to accommodate specific storage requirements.

14. Re claim 18, Cowe et al. teach a method wherein the load storage device is chosen from a group consisting of: a pallet; a shelf; a table, a bin, and a shipping container (S*ee e.g. col. 5, lines 14-20).*

15. Re claims 40, 43, 46, Cowe et al. teach a system/method wherein the instructions further comprise determining the position as a spatial location of the item, relative to the surface, based on load signals in directions of an X,Y plane, an X,Z plane, and a Y,Z plane, the determining comprising determining a number of load sensor positions that detected the change, and calculating a percentage of weight distribution detected on each load sensor position (S*ee e.g. col. 8, lines 44-45, col. 9, lines 5-16).*

16. Re claims 41, 44, 47, Cowe et al. teach a system/method wherein the instructions further comprise comparing the determined identity of the item with items stored in the item database to determine whether a definition record exists for the item (s*ee e.g. col. 11, lines 27-37).*

17. Re claims 42, 45, 48, Cowe et al. teach a system/method wherein the instructions further comprise: updating the item database to include a definition record

comprising description data for the item when the item does not exist in the item database; and updating the item database to include the position of the item when the first item exists in the item database (*see e.g. col. 24, lines 35-42).*

18. Claims 10, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowe et al. (5,671, 362), in view of McPherson (4,674,605), in further view of Teller et al. (4,961,533).

19. Re claims 10, 28, Cowe et al., and in view of McPherson, do not explicitly teach a method wherein comparing the initial and current state load signals further includes comparing the determined net load change to the item weight of one or more of the plurality items potentially included in the load.

However, Teller et al. teach a method wherein comparing the initial and current state load signals further includes comparing the determined net load change to the item weight of one or more of the plurality items potentially included in the load *(see e.g. Col. 3, lines 27-35).*

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Cowe et al., in view of McPherson, by including the step of comparing the determined net load change to the item weight of one or more of the plurality items potentially included in the load, as taught by Teller et al., in order to maximize precision in identifying an item.

20. Claims 8, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowe et al. (5,671, 362), in view of McPherson, in further view of Lysaught (6,450,299).

21. Re claim 8, Cowe et al. teach a method wherein updating the current state model includes adding or removing one or more items to or from the current state model (S*ee e.g. col. 17, lines 38-41).*

22. Re claim 17, Cowe et al., in view of McPherson, do not explicitly teach a method wherein positioning the load sensors includes positioning one or more of the load sensors between the load storage device and the surface upon which the load storage device rests.

However, Lysaught teaches a method wherein positioning the load sensors includes positioning one or more of the load sensors between the load storage device and the surface upon which the load storage device rests (*See e.g. col. 3, lines 38-48).*

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to modify Cowe et al., in view of McPherson, and include the steps cited above, as taught by Lysaught., in order to provide reading accuracy.

Response to Arguments

23. Applicant's arguments with respect to claims 1-6, 8-10, 12, 13, 15-23, 25, 27, 28, 30, 32, 33, 39-48 have been considered but are moot in view of the new grounds of rejection.

Applicant argues that Cowe fails to disclose or render obvious the feature of a plurality of load sensors being positioned on a bottom surface and at respective corners of a load storage. Please see rejection. Such feature is old and well known, as disclosed in Aoki.

Applicant also argues that Cowe further fails to disclose or render obvious the feature of determining an identity of an item based on the change in load and the item database. The Examiner disagrees. Cowe can identify an item based on both a change in both sensor load and database. S*ee for example column 11, lines 33-39* –where data is referenced (from memory), and *column 20, lines 1-5* -where sensing grid 32 may be designed to be sensitive to changes in pressure.

Applicant's arguments are addressed in the rejection.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUNA CHAMPAGNE whose telephone number is (571)272-7177. The examiner can normally be reached on Monday - Friday 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Florian Zeender can be reached on (571) 272-6790. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Luna Champagne/
Examiner, Art Unit 3627

/F. Ryan Zeender/

Supervisory Patent Examiner, Art Unit 3627